

ONKYO® SERVICE MANUAL

DOLBY SURROUND AC-3 DECODER MODEL ED-901

Black and Golden models

BUDN, BUDT	120V AC, 60Hz
BUP, GUPT	230V AC, 50Hz
BUGK	220V AC, 50Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBER APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.




SPECIFICATIONS


Input Sensitivity: and Impedance	INPUT-1,2 analog audio:	50k Ω
	INPUT-1 AC-3RF:	75 Ω
	INPUT-2digital (coaxial):	75 Ω
	INPUT-1,2video:	1Vp-p/75 Ω
	S-video Y:	1Vp-p/75 Ω
	S-video C:	0.28Vp-p/75 Ω
Output Level: and Impedance	D-SUB25 5.1CH OUTPUT	
	LEFT, RIGHT, CENTER, LEFT SURROUND, RIGHT SURROUND (SUB WOOFER) :	0.2V/470 Ω
Frequency response:	Dolby AC-3 5CH out	20 Hz - 20 kHz+0/-3dB
Distortion:	L/C/R/LS/RS:	0.05%/1kHz
	SUBWOOFER:	0.05%/50Hz
Signal to noise ratio:		98dB (Output=2v)(IHF-A)
Power consumption:	25 watts	
Power supply rating:	USA and Canadian models:	
	AC 120 V, 60 Hz	
	European model:	
	AC 230 V, 50 Hz	
Dimensions (W \times H \times D):	455 \times 90 \times 320 mm	
	(17-15/16" \times 3-9/16" \times 12-5/8")	
Weight:	4.3 kg, (9.5 lbs.)	

Specifications and external appearance are subject to change without notice because of product improvements.

SERVICE NOTE

1. Replacing the fuses

 This symbol located near the fuse indicates that the fuse use is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating refer to the making adjacent to the symbol.

 Ce symble indique que le fusible utilise est a rapide.pour une protection permanente, n'utiliser que des fusibles de meme type. Ce darnier est indique la qu le present symbol est appose.

2. Safety-check out

(Only U.S.A. model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer. Connect the insulating-resistance tester between the plug of power supply cord and the screw on the back panel.

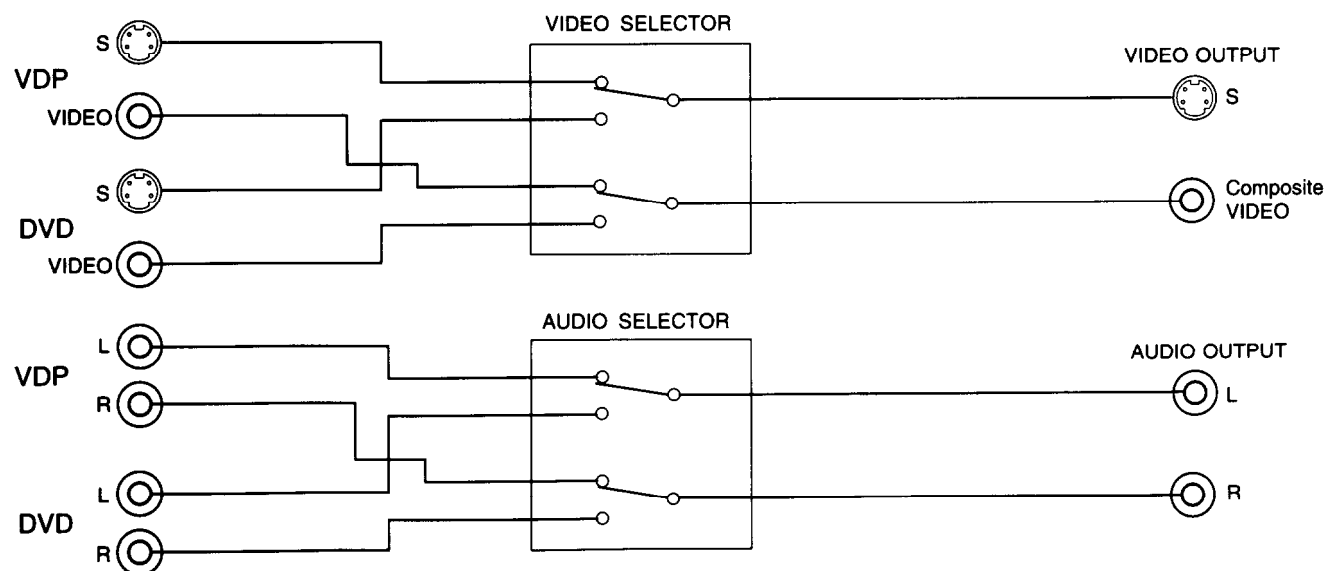
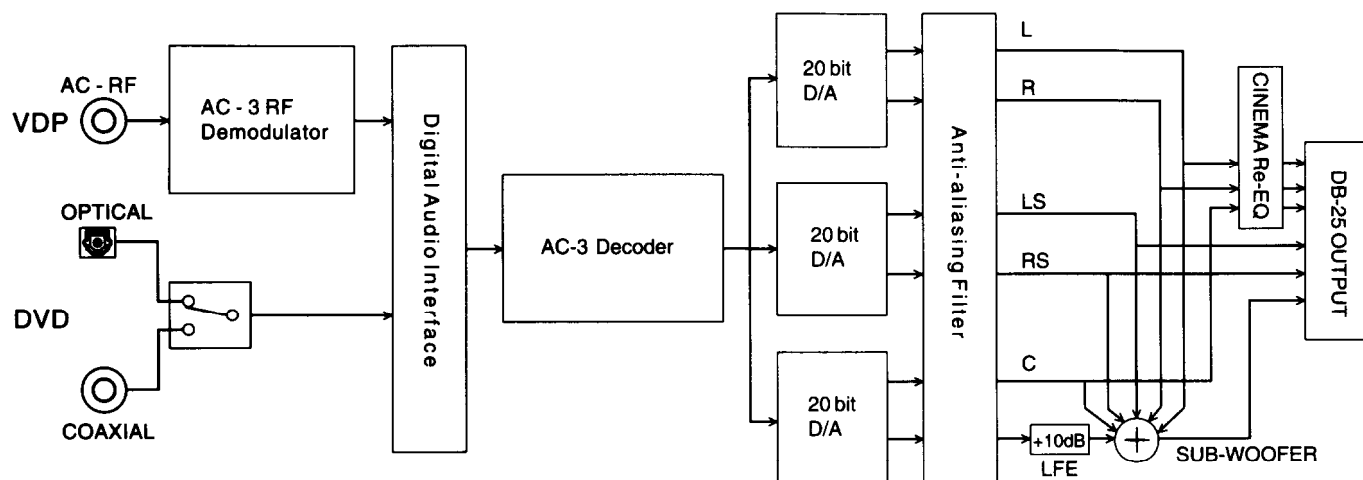
Specifications: More than 50M Ω at 500V.

MARK	REF.NO.	PART NO.	DESCRIPTION
D \triangle	F901	252145	1A-TSC, Primary fuse
P \triangle	F902	252063	0.5A-SE-EAK, Primary fuse

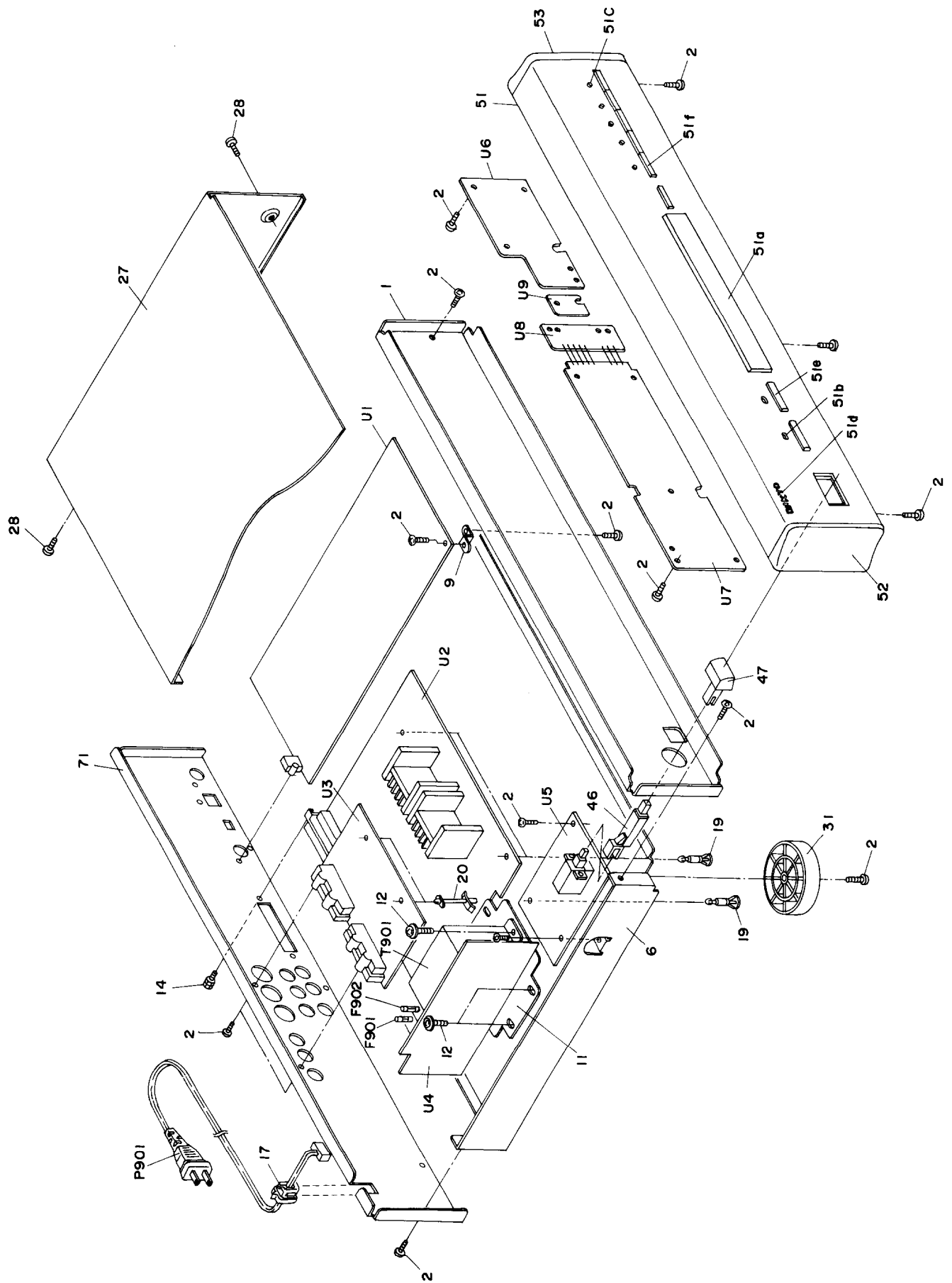
NOTE: <D> : 120V model only

<P> : Other models

BLOCK DIAGRAM



EXPLODED VIEW



PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
1	27110905	Front bracket	F901	252145	△ 1A-TSC, Primary fuse <D>
2	838130088	3TTB+8B, Self-tapping screw	F902	252063	△ 0.5A-SE-EAWK, Primary fuse <P/K>
6	27100238A	Chassis	P901	253192HIT	△ AS-UC-6 #18, Power supply cord <D>
9	27141333	Retainer S	P901	253213WSE	△ KS-AS, Power supply cord <K>
11	27141657A	Retainer PT	P901	253193HIT	△ AS-CEE, Power supply cord <P>
12	830440089	4TTC+8C(BC), Self-tapping screw	T901	2301154	△ NPT-1258D, Power transformer <D>
14	801541	HFS-4S-BIWM, Special screw	T901	2301210	△ NPT-1258G, Power transformer <K>
17	27300750	△ Bushing cord	T901	2301155	△ NPT-1258P, Power transformer <P>
19	27190266	KGLS-12RT, Holder	U1	1W151558-1	NADG-5658-1, Main circuit pc board ass'y
20	27190470	KGLS-18S, Holder	U2	1W151560-1A	NAAF-5660-1A, Pre., amplifier pc board ass'y <D>
27	28184489B	Top cover 	U2	1W151560-1B	NAAF-5660-1B, Pre., amplifier pc board ass'y <P/K/T>
27	28184662	Top cover <G>	U3	1W151561-1A	NAETC-5661-1A, Video circuit pc board ass'y <D>
28	838430088	3TTB+8B(BC), Self-tapping screw	U3	1W151561-1B	NAETC-5661-1B, Video circuit pc board ass'y <P/K/T>
31	27175292-1	Leg	U4	1W151562-1A	NAPS-5662-1A, Primary circuit pc board ass'y <D>
46	27273116Y	Joint, power	U4	1W151562-1B	NAPS-5662-1B, Primary circuit pc board ass'y <P/K/T>
47	28324140	Knob, power 	U5	1W151563-1A	NAPS-5663-1A, Power switch pc board ass'y <D>
47	28325104Y	Knob, power <G>	U5	1W151563-1B	NAPS-5663-1B, Power switch pc board ass'y <P/K/T>
51	1W151121	Front panel ass'y 	U6	1W151564-1A	NADIS-5664-1A, Operation switch pc board ass'y <D>
51	1W150121	Front panel ass'y <G>	U6	1W151564-1B	NADIS-5664-1B, Operation switch pc board ass'y <P/K/T>
51	27211774A	Front panel 	U7	1W151565-1A	NADIS-5665-1A, Display circuit pc board ass'y <D>
51	27211855	Front panel <G>	U7	1W151565-1B	NADIS-5665-1B, Display circuit pc board ass'y <P/K/T>
51a	28191734A	Clear plate	U8	1W151566-1A	NADIS-5666-1A, LED pc board ass'y <D>
51b	28198751	Facet L	U8	1W151566-1B	NADIS-5666-1B, LED pc board ass'y <P/K/T>
51c	28198795	Facet	U9	1W151568-1A	NAETC-5668-1A, Delay switch pc board ass'y <D>
51d	28135199Y	Badge	U9	1W151568-1B	NAETC-5668-1B, Delay switch pc board ass'y <P/K/T>
51e	28325247	Knob A 	NOTE: <D>:120V model only <P>:230V model only <K>:Korean model only <T>:Taiwanese model only :Black model only <G>:Golden model only		
51e	28325442	Knob A <G>			
51f	28325248	Knob B 			
51f	28325443	Knob B <G>			
52	28125273	End cap L 			
52	28125345	End cap L <G>			
53	28125274	End cap R 			
53	28125346	End cap R <G>			
71	27122161	Back panel <D>			
71	27122163	Back panel <K>			
71	27122162	Back panel <P>			

NOTE: THE COMPONENTS IDENTIFIED BY MARK △
ARE CRITICAL FOR RISK OF FIRE AND
ELECTRIC SHOCK. REPLACE ONLY WITH
PART NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD-PARTS LIST

MAIN CIRCUIT PC BOARD(NADG-5658-1)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	Rremote sensor			Capacitors	
U801	24120034	TORX178	C416	354741009	10 μ F, 16V, Elect.
	ICs		C417	373023324R2	3300pF \pm 5%, 50V, Plastic
Q102	22240976R1	MC14577A	C418,C419	373021524R2	1500pF \pm 5%, 50V, Plastic
Q105	22240977R2	NJM360M	C420	373022214R2	220pF \pm 5%, 50V, Plastic
Q106	222740045R1TO	TC74HCU04AF	C421	354741009	10 μ F, 16V, Elect.
Q107,Q109	22240581R2	NJM4565M	C422	373023324R2	3300pF \pm 5%, 50V, Plastic
Q110	22240973R3	PD4606A	C423,C424	373021524R2	1500pF \pm 5%, 50V, Plastic
Q111,Q112	22241036R9 or	M5M5256CFP-70LL or	C425	373022214R2	220pF \pm 5%, 50V, Plastic
	22240985R3	TC55257DFL-85L	C426	354741009	10 μ F, 16V, Elect.
Q113	22240935R2	TC7WU04FU	C427	373023324R2	3300pF \pm 5%, 50V, Plastic
Q401~Q404	22240581R2	NJM4565M	C428,C429	373021524R2	1500pF \pm 5%, 50V, Plastic
Q701	22240971	TMP87PH40AN	C430	373022214R2	220pF \pm 5%, 50V, Plastic
Q703	22240984R2	TC7S04F	C437	354741009	10 μ F, 16V, Elect.
Q801	22240915R3	LC8904Q	C438	354744719	470 μ F, 16V, Elect.
Q802	22240972R3	XC56009FJ80 *	C702	3000076	EECS5R5T104, EDL-C
Q804~Q806	22240942R9	AK4320-VM	C704	354780479	4.7 μ F, 50V, Elect.
	Transistors		C705	375524744	0.47 μ F \pm 5%, 50V, Plastic
Q101,Q103	2213143R2	2SC2712-O	C804	374721044	0.1 μ F \pm 5%, 50V, Plastic
Q104,Q108	2214373R2	2SA1162-O	C805	373021034R2	0.01 μ F \pm 5%, 50V, Plastic
Q702	2214603R2	2SC2714-O	C807	354744709	47 μ F, 16V, Elect.
	Diodes		C814	354741009	10 μ F, 16V, Elect.
D101	223236R2	KV1851-TL	C825	354721019	100 μ F, 6.3V, Elect.
D102,D103	223234R2	1SS352	C827	374721054	1 μ F \pm 5%, 50V, Plastic
D701~D705	223234R2	1SS352	C853,C857	354721019	100 μ F, 6.3V, Elect.
D804	223234R2	1SS352	C861,C865	354721019	100 μ F, 6.3V, Elect.
	Coils		C862,C863	354721019	100 μ F, 6.3V, Elect.
L101	233493K680S	NCH-1487, 680K	C864	354780479	4.7 μ F, 50V, Elect.
L102,L701	231237K470R2	NCH-1479	C866	354721019	100 μ F, 6.3V, Elect.
L801,L802	231237K470R2	NCH-1479		Resistors	
L804,L805	231237K470R2	NCH-1479	R707,R708	49163103406	RM1/10I10K*6, Array
	Ceramic filter		R709	49163332414	RM1/10I3.3K*14, Array
X101	3010263	SBP-4930		Terminals	
	Resonators		P101	25045302	NPJ-1PDBL161
X102	3010266	XTL-18.432M, CRYSTAL	P801	25045473	NPJ-1PDBL291
X103	3010267	XTL-46.08M, CRYSTAL		Plugs	
X701	3010190	CST8.00MTW, CERA LOCK	JL801b	25055628	NPLG-7P590
X801	3010266	XTL-18.432M, CRYSTAL	JL802b	25055629	NPLG-8P591
	Capacitors		JL803b	25055632	NPLG-11P594
C105,C106	375524744	0.47 μ F \pm 5%, 50V, Plastic	JL804b	25055631	NPLG-10P593
C107	354744709	47 μ F, 16V, Elect.		Switch	
C108	354721019	100 μ F, 6.3V, Elect.	S801	25065286	NSS-22112, Slide
C116,C117	354721019	100 μ F, 6.3V, Elect.			
C125,C126	354721019	100 μ F, 6.3V, Elect.			
C401	354741009	10 μ F, 16V, Elect.			
C402	373023324R2	3300pF \pm 5%, 50V, Plastic			
C403,C404	373021524R2	1500pF \pm 5%, 50V, Plastic			
C405	373022214R2	220pF \pm 5%, 50V, Plastic			
C406	354741009	10 μ F, 16V, Elect.			
C407	373023324R2	3300pF \pm 5%, 50V, Plastic			
C408,C409	373021524R2	1500pF \pm 5%, 50V, Plastic			
C410	373022214R2	220pF \pm 5%, 50V, Plastic			
C411	354741009	10 μ F, 16V, Elect.			
C412	373023324R2	3300pF \pm 5%, 50V, Plastic			
C413,C414	373021524R2	1500pF \pm 5%, 50V, Plastic			
C415	373022214R2	220pF \pm 5%, 50V, Plastic			

PRE., AMPLIFIER PC BOARD(NADG-5658-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q301~Q307	22240312	NJM4580L-D
Q308	22240798	TC9162AN
Q901	222780125	78M12HF
Q902	222790125	79M12HF
Q903,Q905	222780054	7805HF
Q904	222790055	79M05HF
	ICs	
Q311~Q326	2213631 or 2213632	RN1241-A or RN1241-B
Q327,Q329	2213510 or 2214350	DTA114ES or RN2202
Q328,Q330	2213284	2SC1740S-R
Q906	2213284	2SC1740S-R
	Diodes	
D301,D302	223205,	1SS270A,
D910,D911	223163 or 223222	1SS133 or WG713A
D303,D304	223163	1SS133
D901~D909	22380260, 22380035 or 22380046	RL1N4003, GP104003E or AM01Z
	Capacitors	
C301~C304	354741009	10 μ F,16V, Elect.
C307~C314	354741009	10 μ F,16V, Elect.
C315	354782299	0.22 μ F,50V, Elect.
C322	374723324	3300pF \pm 5%,50V, Plastic
C324,C325	374723324	3300pF \pm 5%,50V, Plastic
C332	354782299	0.22 μ F,50V, Elect.
C333	374723324	3300pF \pm 5%,50V, Plastic
C351~C359	374721234	0.012 μ F \pm 5%,50V, Plastic
C334,C335	374723324	3300pF \pm 5%,50V, Plastic
C909	354764709	47 μ F,35V, Elect.
C910	354762229	2200 μ F,35V, Elect.
C911	354761029	1000 μ F,35V, Elect.
C914,C915	354741009	10 μ F,16V, Elect.
C918	354754729	4700 μ F,25V, Elect.
C919	354761029	1000 μ F,35V, Elect.
C922,C923	354741009	10 μ F,16V, Elect.
C925,C927	354741009	10 μ F,16V, Elect.
C926	354744719	470 μ F,16V, Elect.
	Capacitors	
R902~R905	453532294	0.22 Ω \pm 5%,1/2W, Metal
R906,R907	443621004	10 Ω \pm 5%,1W, Metal oxide
R908,R917	453630564	5.6 Ω \pm 5%,1W, Metal
R909	443621004	10 Ω \pm 5%,1W, Metal oxide
R910	453630104	1 Ω \pm 5%,1W, Metal
	Terminal	
P301	25045300	NPJ-6PDBL159
	Socket	
P302	25051573	NSCT-25P1360
	Wire holders	
JL201a	25051089	NSCT-5P876
JL801a	25051091	NSCT-7P878
JL802a	25051092	NSCT-8P879
JL803a	25051095	NSCT-11P882

CIRCUIT NO.	PART NO.	DESCRIPTION
	Radiators	
Q901a,Q902a	27160145	RAD-51
Q903a,Q905a	27160221	RAD-74
Q904a	27160145	RAD-51
	Screws	
	838430107	3TTP-10S(BC)

VIDEO CIRCUIT OC BOARD(NNAETC-5661-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q201	222840531TOS	TC4053BP
	Transistors	
Q202~Q207	2213284 or 2212115	2SC1740S-R or 2SC2458-GR
Q208	2213284	2SC1740S-R
Q209,Q210	2213290	DTC114ES
	Capacitors	
C201	354780229	2.2 μ F,50V, Elect.
C202,C203	354721019	100 μ F,6.3V, Elect.
C204	354780229	2.2 μ F,50V, Elect.
C205,C206	354721019	100 μ F,6.3V, Elect.
C207,C208	354741019	100 μ F,16V, Elect.
C209	354741009	10 μ F,16V, Elect.
C210,C211	354724719	470 μ F,6.3V, Elect.
	Socket	
P201	25051568	NSCT-12P1355
	Terminal	
P202	25045299	NPJ-3PDYE158
	Plug	
JL201b	25055626	NPLG-5P588

PRIMARY CIRCUIT PC BOARD (NAPS-5662-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
L901	231238	△ NCH-3484, Coil
C902	3500191	△ DE7150F103M, IS Capacitors
P902	25055675	NPLG-2P631, Plug
JL901a	25051110	NSCT-6P897, Wire holder
JL901b	25050270	NSCT-6P98, Socket
P903	25050065	△ YSH403T, Fuseholder <D>
P904	25050065	△ YSH403T, Fuseholder <P>
C903a	27301216	△ SB-1925A, Cover <P>

POWER SWITCH PC BOARD(NAPS-5663-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
C901	3500191	△ DE7150F103M, IS Capacitor
S901	25035550	△ NPS-111-L512P, Push switch

OPERATION SWITCH PC BOARD(NADIS-5664-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diode	
D752	223205, 223163 or 223222	1SS270A, 1SS133 or WG713A
	L.E.Ds	
D761~D765	225292DT	SEL4310G-D, LED

CIRCUIT NO.	PART NO.	DESCRIPTION
	Switches	
S753-S757	25035652	NPS-111-S604, P SW
	Wire holders	
JL701a	25051093	NSCT-9P880
JL702a	25051089	NSCT-5P876
JL703a	25051087	NSCT-3P874
JL804a	25051094	NSCT-10P881

DISPLAY CIRCUIT PC BOARD(NADIS-5665-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	IC	
Q751	22240980	M66313
	Transistors	
Q752,Q753	2213510 or 2214350	DTA114ES or RN2202
	L.E.Ds	
D753,D754	225142	SEL2913K
D755	225141	SEL2213C
D756-D760	225137CG or 225137DG	SEL2413E-CG or SEL2413E-DG
	Capacitors	
C751	354780229	2.2 μ F,50V, Elect.
C752	354721019	100 μ F,6.3V, Elect.
	Push switches	
S751,S752	25035652	NPS-111-S604
	Wire holders	
JL701b	25051093	NSCT-9P880
JL702b	25051089	NSCT-5P876

LED PC BOARD(NADIS-5666-1A/1B)

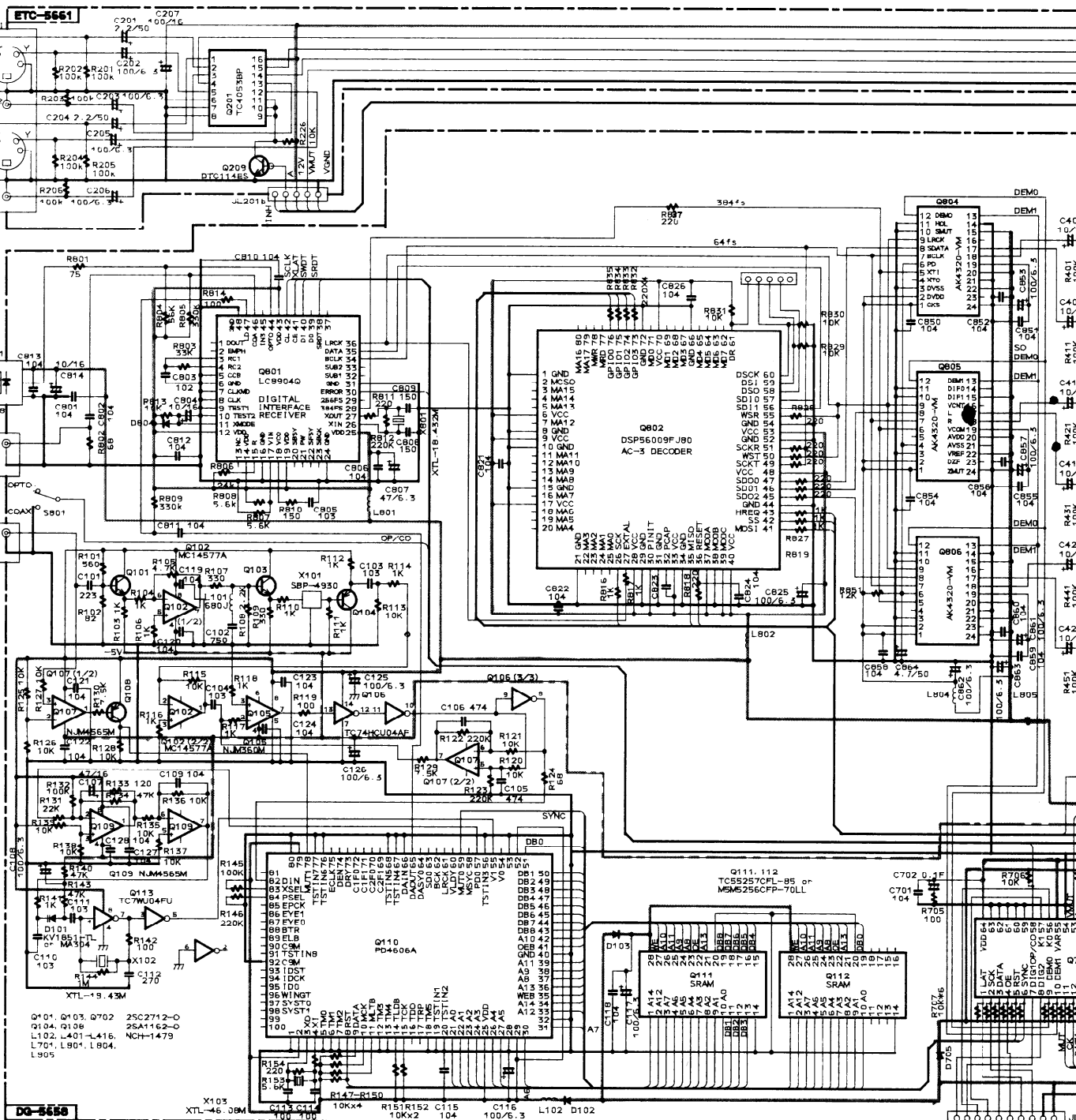
CIRCUIT NO.	PART NO.	DESCRIPTION
D751	225328	LB202MB, LED

DELAY SWITCH PC BOARD (NAETC-5668-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
S758	25035652	NPS-111-S604, Push switch
JL703b	25051087	NSCT-3P874, Wire holder

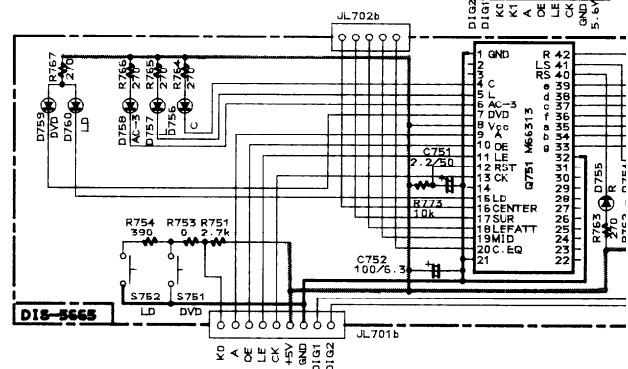
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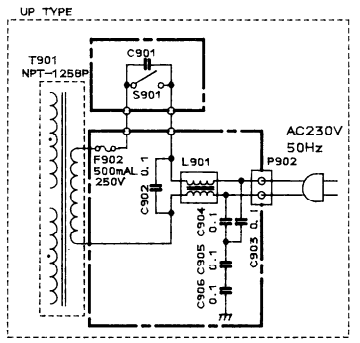
SCHEMATIC DIAGRAM



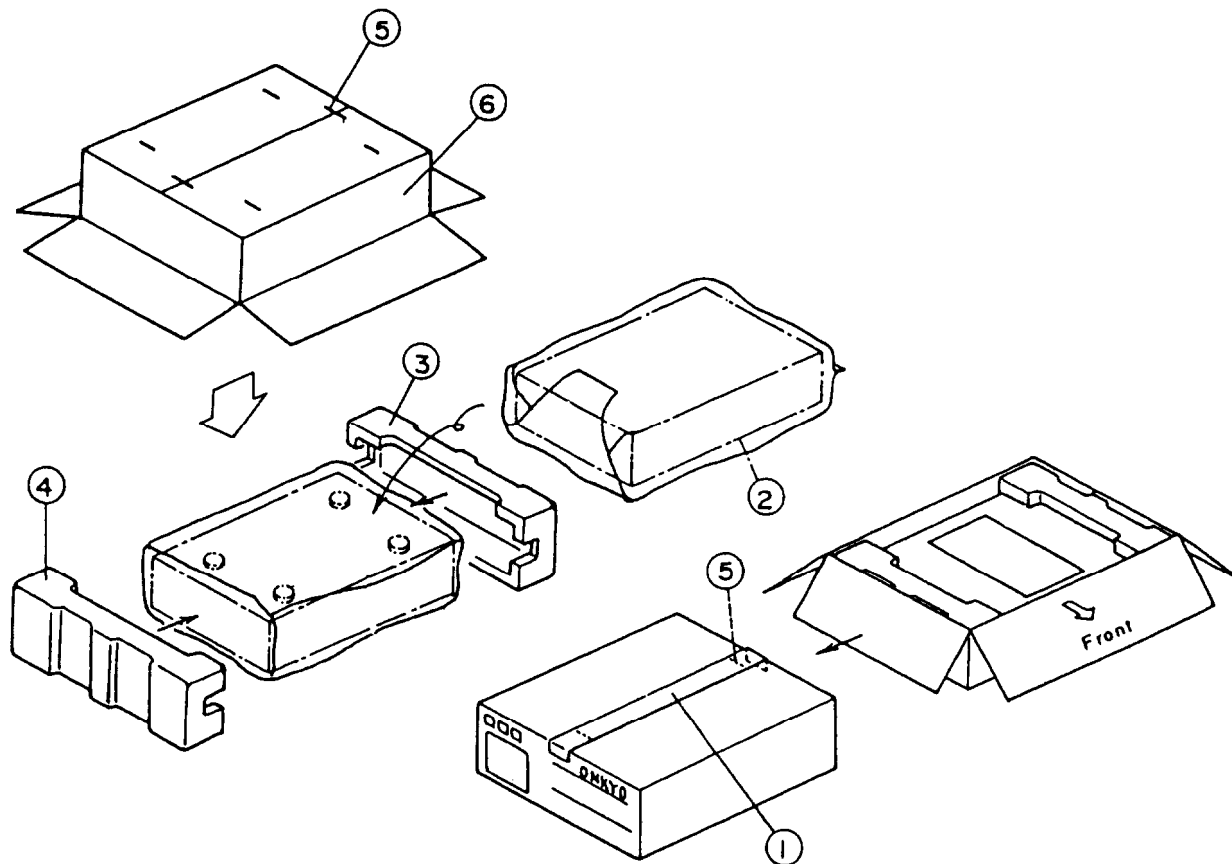
NOTE

- THE COMPONENTS IDENTIFIED BY MARK **A** ARE CRITICAL FOR SAFETY.
- REPLACE ONLY WITH PART NUMBER SPECIFIED
- VOLTAGE (MEASURED WITH VOLTMETER) IS DC VOLTAGE. (NO INPUT SIGNAL).
- ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1015-GR UNLESS OTHERWISE NOTED
- ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-GR UNLESS OTHERWISE NOTED
- ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED
- ALL ELECTROLYTIC CAPACITORS ARE IN μ F ARE IN μ F/W
- ALL CAPACITORS ARE IN μ F/50VW UNLESS OTHERWISE NOTED.
- EXX030-3pF. 330-330pF 331-330pF. 333-0.033 μ F
- ALL RESISTORS ARE IN OHMS 1/4 WATTS UNLESS OTHERWISE NOTED
- THE TOP SIDE INDICATED ON BOARD ARE THE PRINTING SIDE OF THE PARTS.
- EXCEPT PRINTING SIDE
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT





PACKING VIEW



REF.NO.	PART NO.	DESCRIPTION
1	29110071	PP tape
2	29100033A	Styrene bag
3	29091491A	Pad R
4	29091490A	Pad L
5	282321	Staple
6	29052954	Master carton box
6	29053074	Master carton box <G>
	Accessory bag ass'y	
	2010098A	Audio connection cord
	2010330	Video connection cord
	2010331	DB25, Cord ass'y
	2010330	Coaxial cord
	29342251	Instruction manual E
	29342252	Instruction manual U6 <P>
	29342263	Instruction manual U3 <A>
	29355221	Instruction sheet <K>
	29355133A	Instruction sheet <P>
	29365019B	Warranty card <N>
	29358002K	Service station list <N>
	29361928	Label UPC <D>
	29361574	Label PE-HD <P>
	29100097-1AY	350 × 250, Styrene bag

NOTE: <N>:U.S.A model only
 <P>:230V model only
 <K>:Korean model only
 <A>:Asian model only
 :Black model only
 <G>:Golden model only